ABSTRACT OF THE INVENTION

The present invention relates to methods and compositions for the treatment and diagnosis of cardiovascular disease, including, but not limited to, atherosclerosis, advanced atherosclerosis/plaque rupture, ischemia/reperfusion, hypertension, restenosis, cardiac calcification, allo/xenograft valvular calcifications, and arterial inflammation. Specifically, the present invention identifies and describes genes which are differentially expressed in cardiovascular disease states, relative to their expression in normal, or non-cardiovascular disease states, and/or in response to manipulations relevant to cardiovascular disease. Further, the present invention identifies and describes genes via the ability of their gene products to interact with gene products involved in cardiovascular disease. Still further, the present invention provides methods for the identification and therapeutic use of compounds as treatments of cardiovascular disease. Moreover, the present invention provides methods for the diagnostic monitoring of patients undergoing clinical evaluation for the treatment of cardiovascular disease, and for monitoring the efficacy of compounds in clinical trials. Additionally, the present invention describes methods for the diagnostic evaluation and prognosis of various cardiovascular diseases, and for the identification of subjects exhibiting a predisposition to such conditions. Moreover, the present invention is further based in part on the generation and phenotypic characterization of transgenic knockout homozygous rchd534 mutant mice which display characteristic cardiovascular disease symptoms. Such transgenic knockout homozygous rchd534 mutant mice are useful models for the analysis and characterization of rchd534 protein involvement in development and homeostasis of the cardiovascular system and tissue-specific regulation of the TGF-β signaling pathways.